

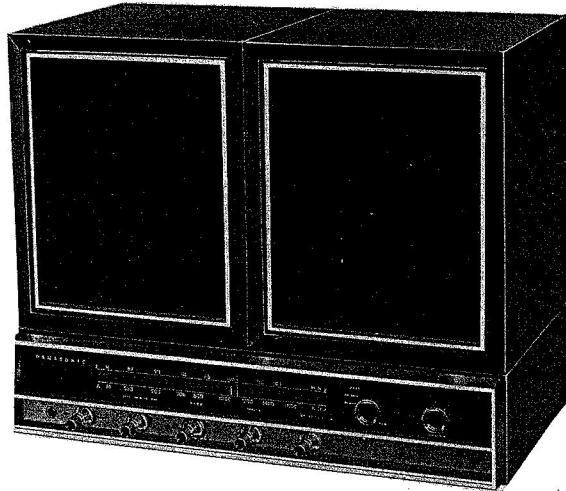


ORDER NO. RD-654

MODEL RE-7670B

NATIONAL PANASONIC

Service Manual

Original FM-AM FM STEREO TABLE RADIO
MODEL RE-7670B

SPECIFICATIONS

Frequency Range:	FM 87.5~108 MHz	Diodes:	0A90/1N34A×2 FM D. AGC
	AM 520~1610 kHz (577~186 m)		0A90/1N34A AM Detector & AGC
Intermediate Frequency:	FM 10.7 MHz		0A90/1N34A FM Detector
	AM 455 kHz		0A90/1N34A×4 MPX Detector
Transistors:	2SK19 FM RF Amplifier		1S1211×2 Operation Compensator
	2SC469 FM Oscillator		0A90/1N34A DC Switching
	2SC920 FM Mixer		FM 10 μ V for 30dB Quieting
	2SC920 AM Converter		AM 70 μ V/m for 50mW Output
	2SC469 FM 1st IF Amplifier	Sensitivity:	12W
	2SC469 FM 2nd IF Amp. &		AC 100/120/220/240 V 50~60 Hz
	AM 1st IF Amp.		25W
	2SC469 FM 3rd IF Amp. &	Peak Music Power:	Two 16cm (6 $\frac{1}{2}$) PM Dynamic Speaker,
	AM 2nd IF Amp.	Power Source:	Imp. 16 Ω
	2SC183 Composite Signal Amplifier	Power Consumption:	Tuner
	2SC183 19 kHz Amplifier		421(Wide) × 97.5(High) × 230(Deep) mm
	2SA101 38 kHz Amplifier		(16 $\frac{1}{16}$ " × 3 $\frac{3}{16}$ " × 9 $\frac{1}{16}$)
	2SC183 DC Amplifier	Speakers:	Speaker System
	2SB178 Eye Switching		210(Wide) × 254(High) × 215(Deep) mm
	2SA564×2 Pre Amplifier		(8 $\frac{1}{4}$ " × 10" × 8 $\frac{1}{2}$)
	2SB173×2 Squelch & 1st AF Amplifier	Cabinet Dimensions:	Tuner 4.36 kg. (9 lb. 10 oz.)
	2SB173×2 2nd AF Amplifier		Speaker System 3.9 kg. (8 lb. 10 oz.)
	2SB176×2 3rd AF Amplifier	Weight:	FM Antenna Terminal 300 Ω Unbalance
	2SB473×4 Power Amplifier (push-pull)		Phono Jack 2M Ω
	2SB178 Regulator	Impedance:	Tape Jack 20K Ω
Diodes:	2SC183 Regulator		Rec. Out Jack 2K Ω
	1S351 FM AFC		Speaker Jack 16 Ω
	1S1211 FM D. AGC		Headphone Jack 8~16 Ω
	1S1211 FM AGC		

<EXPORT DIVISION>

MATSUSHITA ELECTRIC TRADING CO., LTD.
P. O. Box 288, Central Osaka, JapanMATSUSHITA ELECTRIC INDUSTRIAL CO., LTD.
RADIO and STEREO DIVISION

MODEL RE-7670B

To Remove Chassis (Refer to Figs. 1-A & B)

1. Remove seven (7) control knobs from cabinet front.
2. Remove three (3) rear panel mounting screws, nos. 2~4, as illustrated in fig. 1-A.
3. Remove rear panel.
4. Remove four (4) red cabinet-mounting screws, nos. 1, 5, 6 & 11, as illustrated in fig. 1-A.
5. Remove four (4) red chassis-mounting screws, nos. 7~10, as illustrated in fig. 1-A.
6. Remove three (3) red chassis-mounting screws, nos. 1~3, as illustrated in fig. 1-B.
7. To remove chassis completely, remove three (3) headphone jack mounting screws.
8. To reassemble, reverse the above procedure.

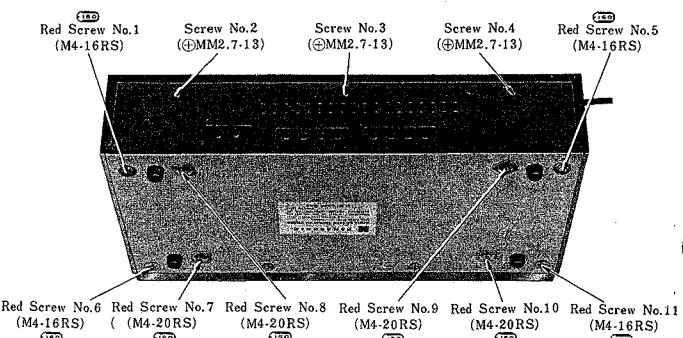


Fig. 1-A

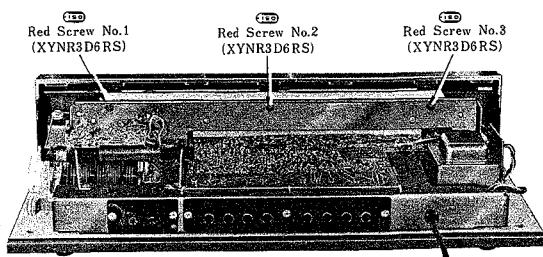
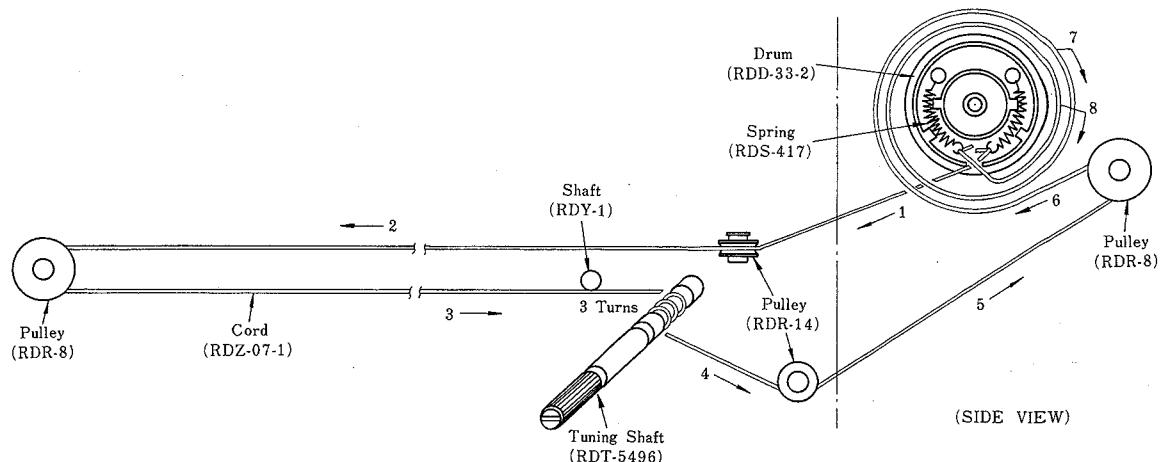


Fig. 1-B

Fig. 1 Top View—Disassembly Points



Notes :

1. Dial cord length is 140cm (55 1/8").
2. Tuning gang is positioned at maximum capacity.
3. Arrow marks (1~8) indicate correct order and direction of stringing dial cord.
4. Cement dial cord ends.

To Mount Dial Pointer

1. Set tuning gang to fully closed position.
2. Set dial pointer to start point of dial scale.
3. Attach dial cord to dial pointer.

Fig. 2 Dial Cord Stringing Guide

MODEL RE-7670B

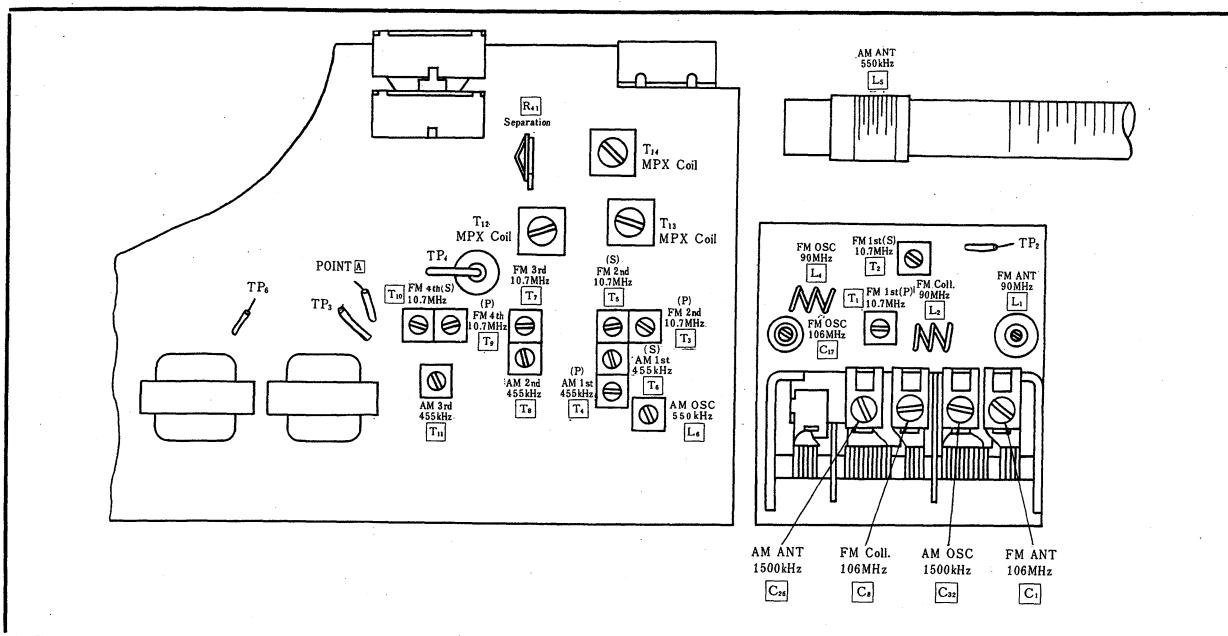


Fig. 3 Alignment Points

ALIGNMENT INSTRUCTIONS

FREQUENCY & DISTANCE ON DIAL SCALE

To accurately align the proper frequencies to the dial scale, refer to Table and mark the edge of the dial scale plate accordingly using the "Start Point" mark on the dial scale as a reference point.

Notes:

1. Remove line cord antenna from FM external antenna terminal when aligning.
2. Make certain that speaker system is connected to the tuner when aligning.

TABLE

Band	Frequency	Distance from "Start Point"
AM	550 kHz	18.4mm
	1500 kHz	138.4mm
FM	90 MHz	26.6mm
	106 MHz	122.4mm

I. AM/FM IF & RF ALIGNMENT

AM IF & RF ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading.
Set band selector switch to AM.

Set volume control to maximum.

Set balance control to center.

Set bass control to center.

Set treble control to center.

Set power source voltage to 100 volts AC.

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
Fashion loop of several turns of wire and radiate signal into loop of receiver.	455 kHz (400~ Mod.)	Point of non-interference. (on/about 600 kHz)	Output meter across EXT speaker jack (L).	T ₄ (1st IFT) (P) T ₆ (1st IFT) (S) T ₈ (2nd IFT) T ₁₁ (3rd IFT)	Adjust for maximum output.
"	550 kHz (400~ Mod.)	550 kHz	"	L ₆ (OSC Coil) L ₅ (ANT Coil)	Adjust for maximum output by sliding coil (L ₅) along ferrite core.
"	1500 kHz (400~ Mod.)	1500 kHz	"	C ₃₂ (OSC Trimmer) C ₂₆ (ANT Trimmer)	Adjust for maximum output. Repeat steps (2) and (3).

Note: Cement antenna bobbin with wax after completing alignment.

MODEL RE-7670B

FM IF & DETECTOR ALIGNMENT WITH OSCILLOSCOPE

EQUIPMENT REQUIRED

Signal generator that provides 10.7 MHz marker.
Sweep generator that provides 10.7 MHz center frequency and 400 kHz sweep width.

OSCILLOSCOPE

Set sweep selector of oscilloscope to "External Sweep". Apply 60 Hz sweep signal from sweep generator to horizontal input terminals of oscilloscope.
Set band selector switch to FM AUTO.
Set volume control to minimum.
Set balance control to center.
Set bass control to center.
Set treble control to center.
Set AFC switch to OFF.
Set power source voltage to 100 volts AC.

Note: When marking alignment step 1, unsolder lead between test point TPs and point A before alignment and resolder it after alignment.

SWEEP GENERATOR COUPLING	SIGNAL GENERATOR COUPLING	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
1 High side thru. .001mfd to point TP ₂ . Common to chassis.	High side thru. .001mfd to point TP ₂ . Common to chassis.	Point of non-interference. (on/about 90 MHz).	Connect vert. Amp. of scope to point TP ₃ . Common to chassis.	T ₁ (FM 1st IFT) (P) T ₂ (FM 1st IFT) (S) T ₃ (FM 2nd IFT) (P) T ₅ (FM 2nd IFT) (S) T ₇ (FM 3rd IFT) T ₉ (FM 4th IFT) (P)	Adjust for maximum amplitude and proper linearity between ±100 kHz markers. (Refer to fig. 4)
2 "	"	"	"	T ₁₀ (FM 4th IFT) (S)	Adjust T ₁₀ so that 10.7 MHz marker is at the center. (Refer to fig. 5)

Note: When aligning the Ratio Detector stage, the wave form may appear as in figs. 4 & 5 or upside-down.

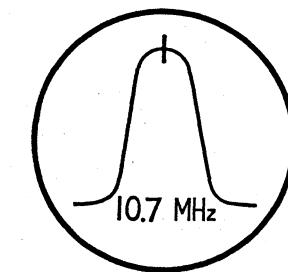


Fig. 4

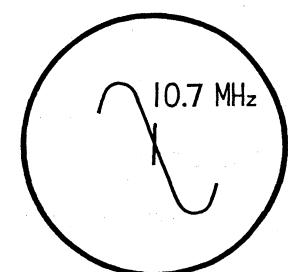


Fig. 5

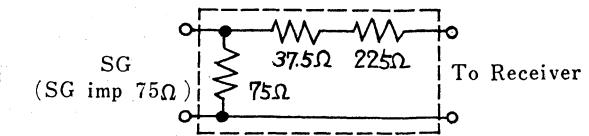


Fig. 6 FM Dummy Antenna

FM RF ALIGNMENT

Output of signal generator should be no higher than necessary to obtain an output reading.

Set volume control to maximum.

Set balance control to center.

Set band selector switch to FM AUTO.

Set AFC switch to OFF.

Set power source voltage to 100 volts AC.

Set bass control to center.

Set treble control to center.

SIGNAL GENERATOR COUPLING	SIGNAL GENERATOR FREQUENCY	RADIO DIAL SETTING	INDICATOR	ADJUSTMENT	REMARKS
3 Connect to EXT. FM Antenna terminal through FM Dummy antenna. (Refer to fig. 6)	90 MHz (400~ Mod.)	90 MHz	Output meter across EXT. speaker jack (L).	L ₄ (FM OSC Coil) L ₁ (FM ANT Coil) L ₂ (FM Collector Coil)	Adjust for maximum output.
4 "	106 MHz (400~ Mod.)	106 MHz	"	C ₁₇ (FM OSC Trimmer) C ₁ (FM ANT Trimmer) C ₈ (FM Collector Trimmer)	Adjust for maximum output. Repeat steps (3) and (4).

Note: Three output responses will be present; proper tuning is the center frequency.

MODEL RE-7670B

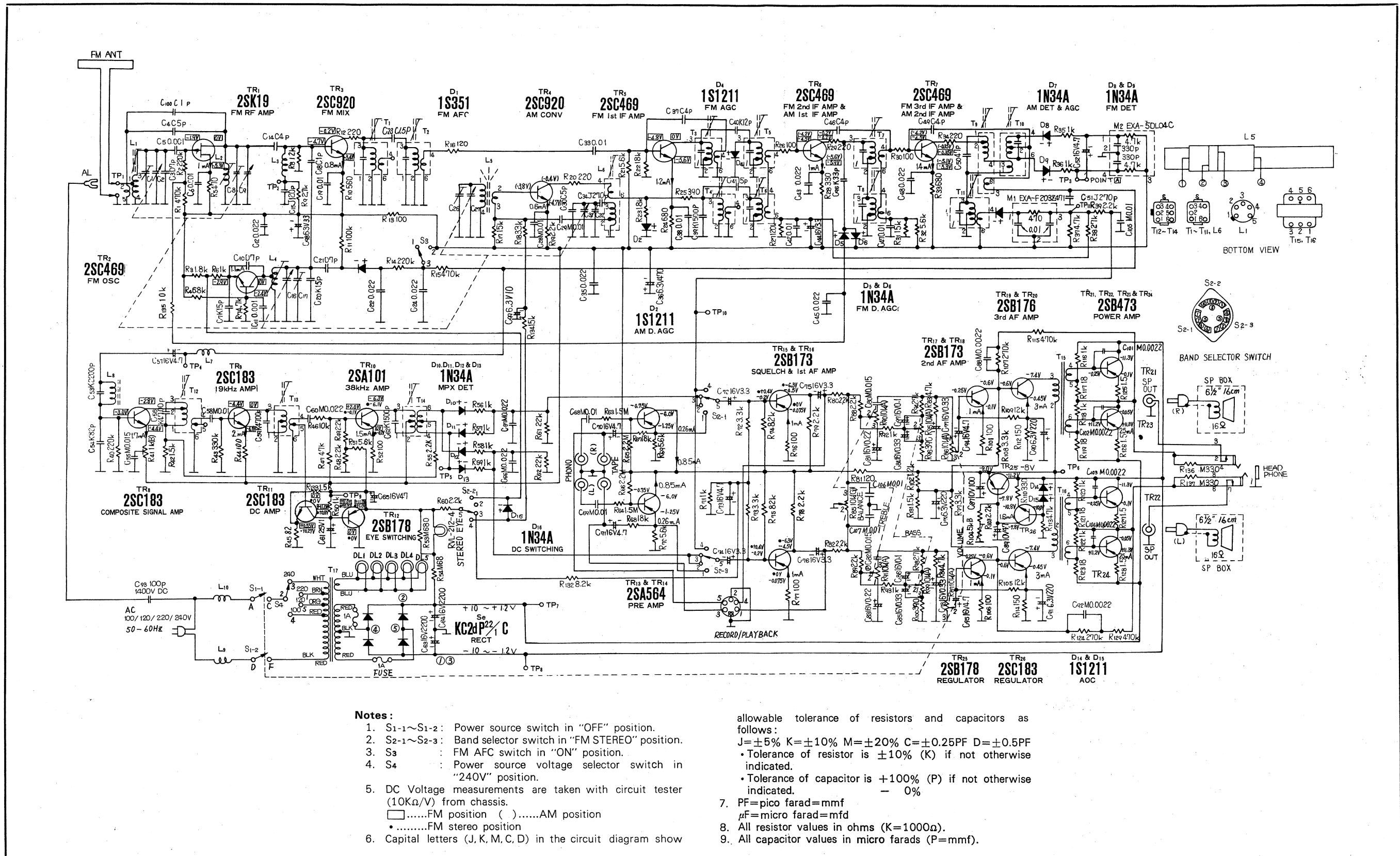
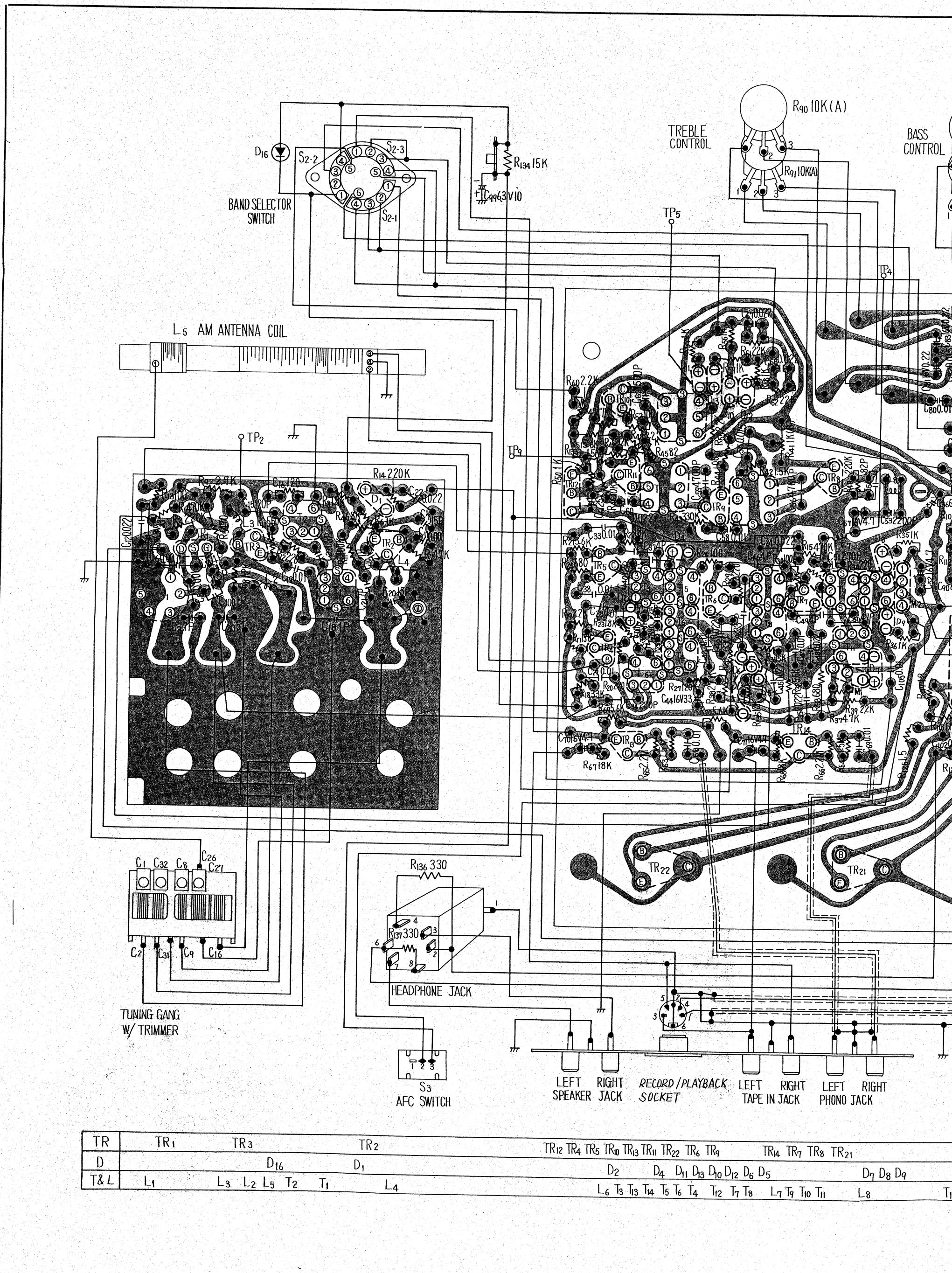
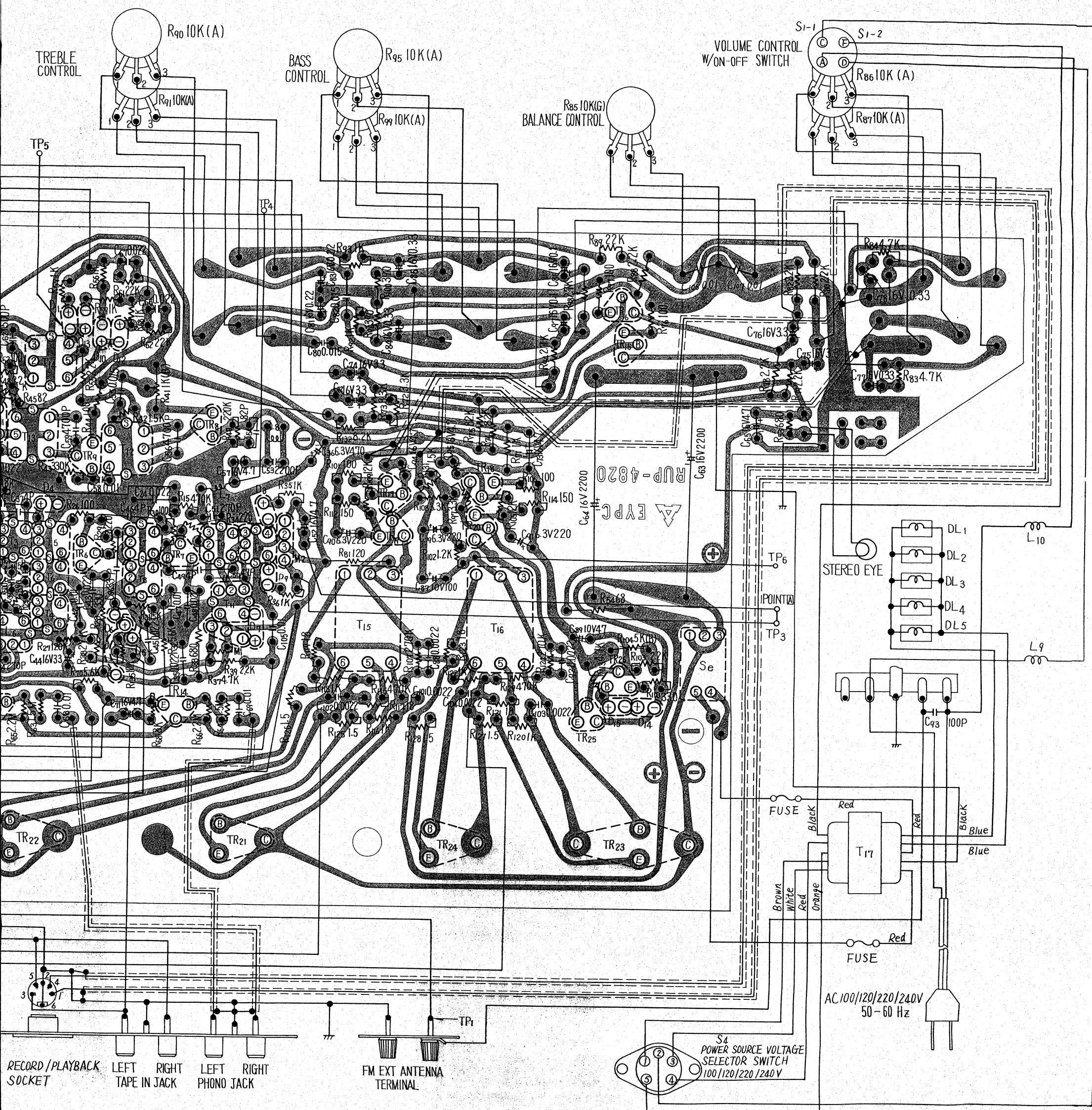


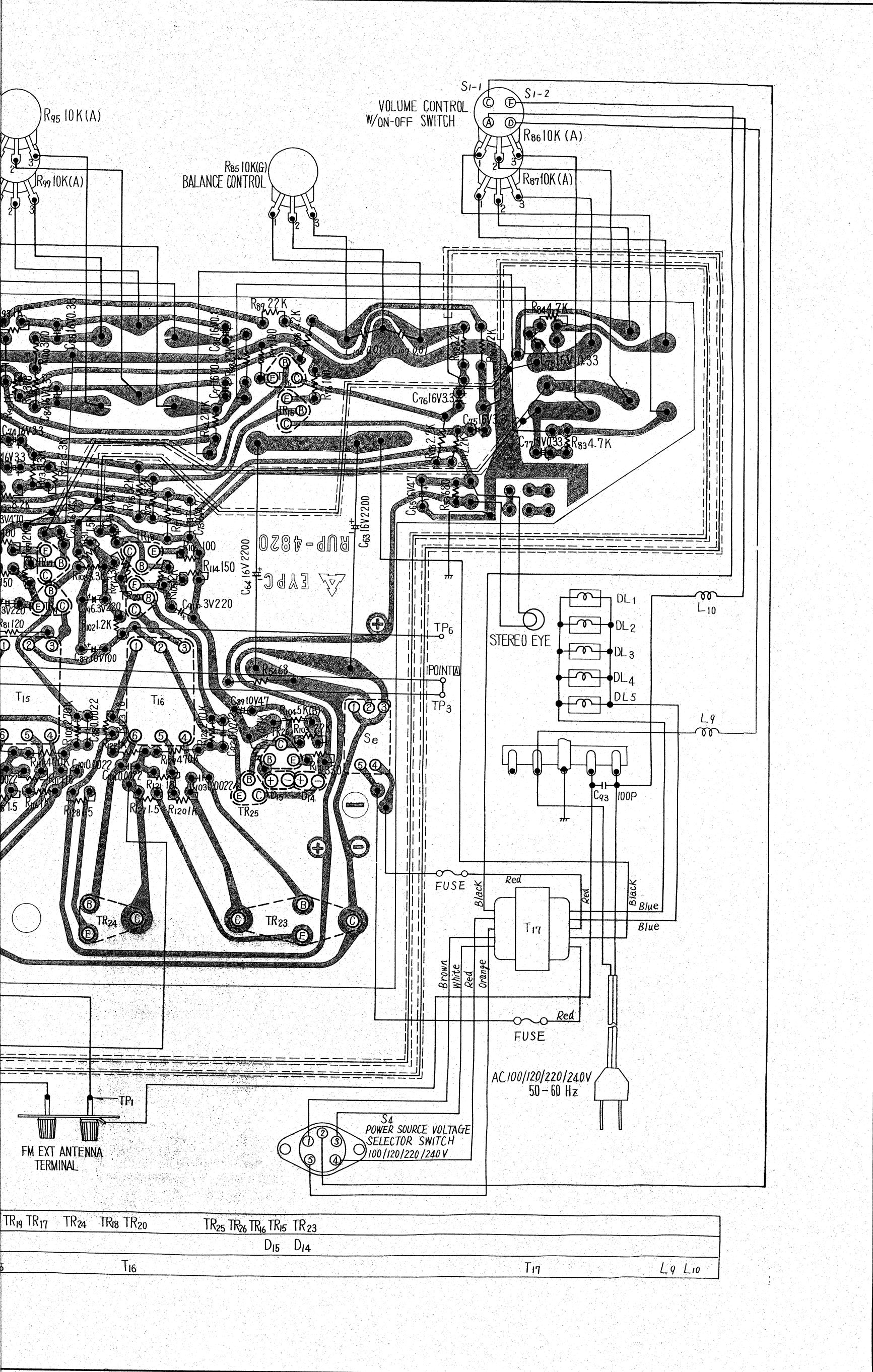
Fig. 7 Schematic Diagram

Fig. 8 Circuit Board Wiring View (Conductor Side)





3 TR ₁₁ TR ₂₂ TR ₆ TR ₉	TR ₁₄ TR ₇ TR ₈ TR ₂₁	TR ₁₉ TR ₁₇ TR ₂₄ TR ₁₈ TR ₂₀	TR ₂₅ TR ₂₆ TR ₁₆ TR ₁₅ TR ₂₃
D ₄ D ₁₁ D ₁₃ D ₁₀ D ₁₂ D ₆ D ₅	D ₇ D ₈ D ₉	D ₁₅ D ₁₄	
3 T ₁₄ T ₅ T ₆ T ₄ T ₁₂ T ₇ T ₈ L ₇ T ₉ T ₁₀ T ₁₁ L ₈	T ₁₅	T ₁₆	T ₁₇
			L ₉ L ₁₀



MODEL RE-7670B

MODEL RE-7670B

II. FM STEREO ALIGNMENT

19 kHz AMP. ALIGNMENT

EQUIPMENT REQUIRED

- * Stereo Modulator.....Connect Stereo Modulator output to EXT. Mod. terminal of signal generator
- * Signal GeneratorModulation Rate of 19 kHz Pilot Signal.....10%
- Output Level.....30 dB
- FrequencyApproximately 89.5 MHz.
- * Oscilloscope * Dummy Antenna

CONTROL SETTING & PROCEDURE

- Tuner.....Band selector switch to "FM STEREO", Bass control to "center"
 Treble control to center, AFC switch to "OFF", Balance control to "center", Volume control to audible level of speaker sound, Dial setting to approximately 89.5 MHz.

Notes :

1. When aligning, remove line cord antenna attached to External FM Antenna terminal.
2. When aligning, set separation control (R_{41} 1KΩ) as illustrated in fig. 9.
3. When aligning, short test point TP_9 to ground and open the shorted TP_9 after completing alignment.

EQUIPMENT COUPLINGS		ADJUSTMENT	REMARKS
SIGNAL GENERATOR	OSCILLOSCOPE		
Connect to EXT. FM antenna terminal through Dummy antenna.	Connect vert. Amp. of scope to point TP_5 . Common to chassis.	T_{12} (MPX Coil) T_{13} (MPX Coil) T_{14} (MPX Coil)	Adjust $T_{12} \sim T_{14}$ for maximum oscilloscope pattern of 19 kHz

SEPARATION ALIGNMENT

EQUIPMENT REQUIRED

- * Stereo Modulator.....Connect Stereo Modulator output to EXT. Mod. terminal of signal generator.
- * Signal GeneratorModulation Rate by 19 kHz Pilot Signal.....10%
 Modulation Rate by L+R Signal27%
 Output Level60dB
- * Oscilloscope * VTVM * Dummy Antenna * Low Pass Filter

CONTROL SETTING PROCEDURE

- Tuner.....Band selector switch to "FM STEREO", Bass control to "center", Treble control to "center", AFC switch to "OFF", Volume control to audible level of speaker sound, Dial setting to approximately 89.5 MHz, Adjust balance control so that output level from both units becomes equal.

EQUIPMENT COUPLINGS			ADJUSTMENT	REMARKS
SIGNAL GENERATOR	VTVM	OSCILLOSCOPE		
Connect to EXT. FM antenna terminal through Dummy antenna.	Connect to speaker voice coil (Left Side) through low pass filter.	Connect to terminals of VTVM.	T_{12} (MPX Coil)	Adjust T_{12} for the minimum indication on VTVM from the left side output when the right side of stereo modulator is modulated.
"	"	"	R_{41} (Separation Control)	Adjust R_{41} for the minimum indication on VTVM from the right side output when the left side of stereo modulator is modulated.

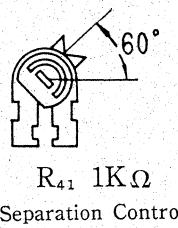
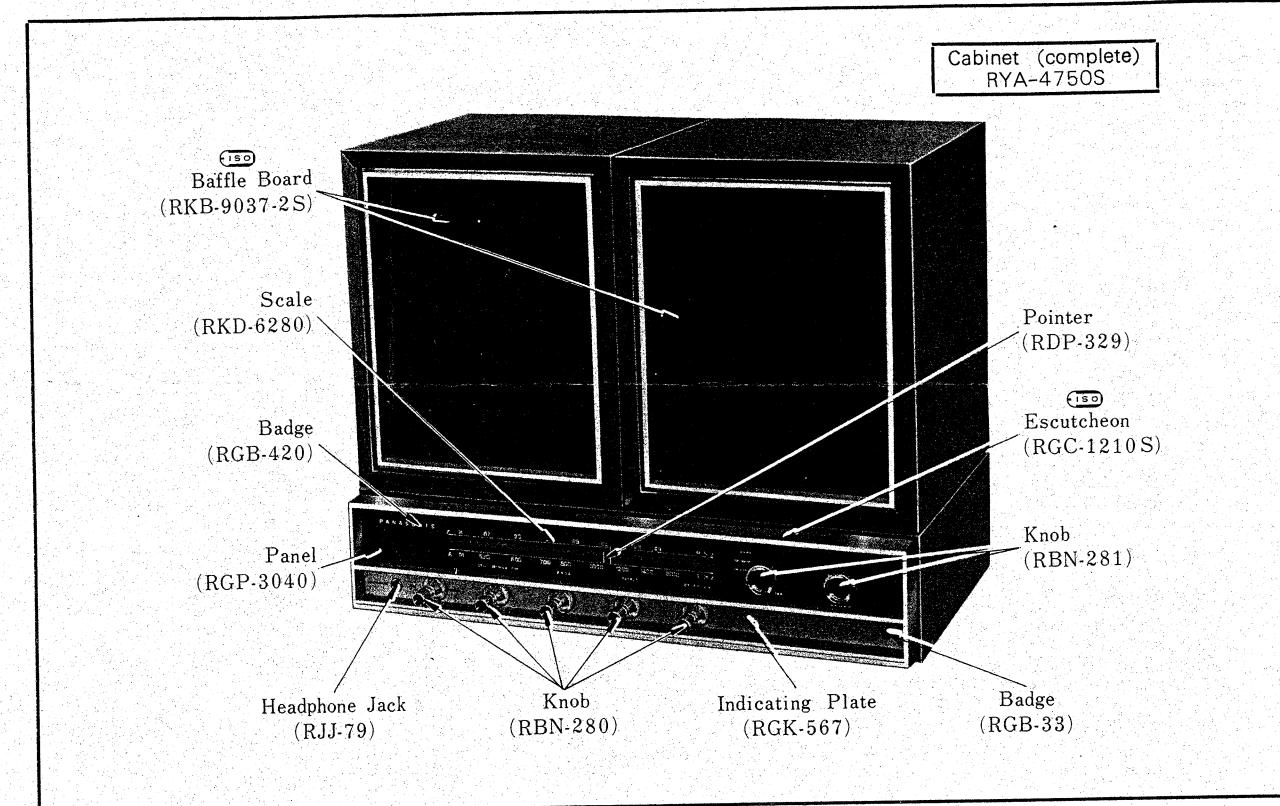
Fig. 9
R₄₁ 1KΩ
Separation Control

Fig. 10 Cabinet & Appearance—Parts Identification

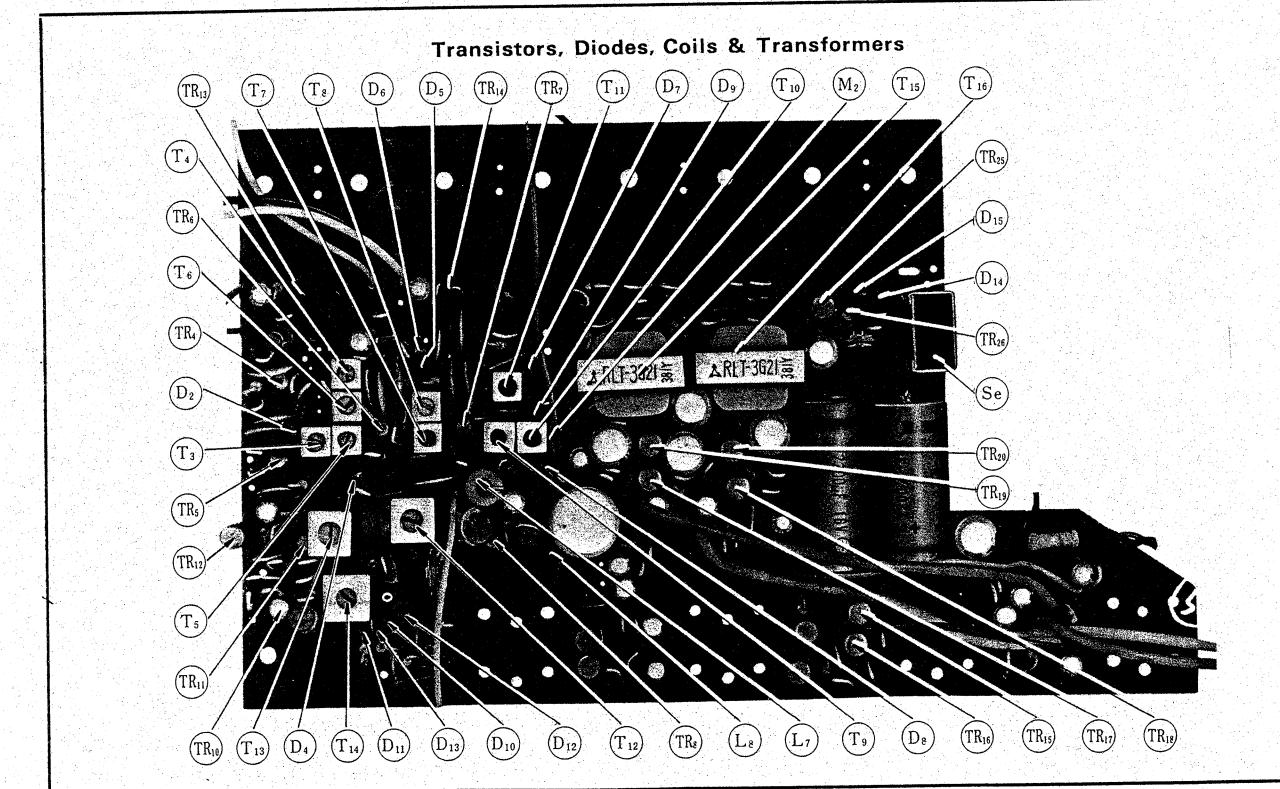


Fig. 11 Component View—Parts Identification, IF, MPX & Audio Circuit

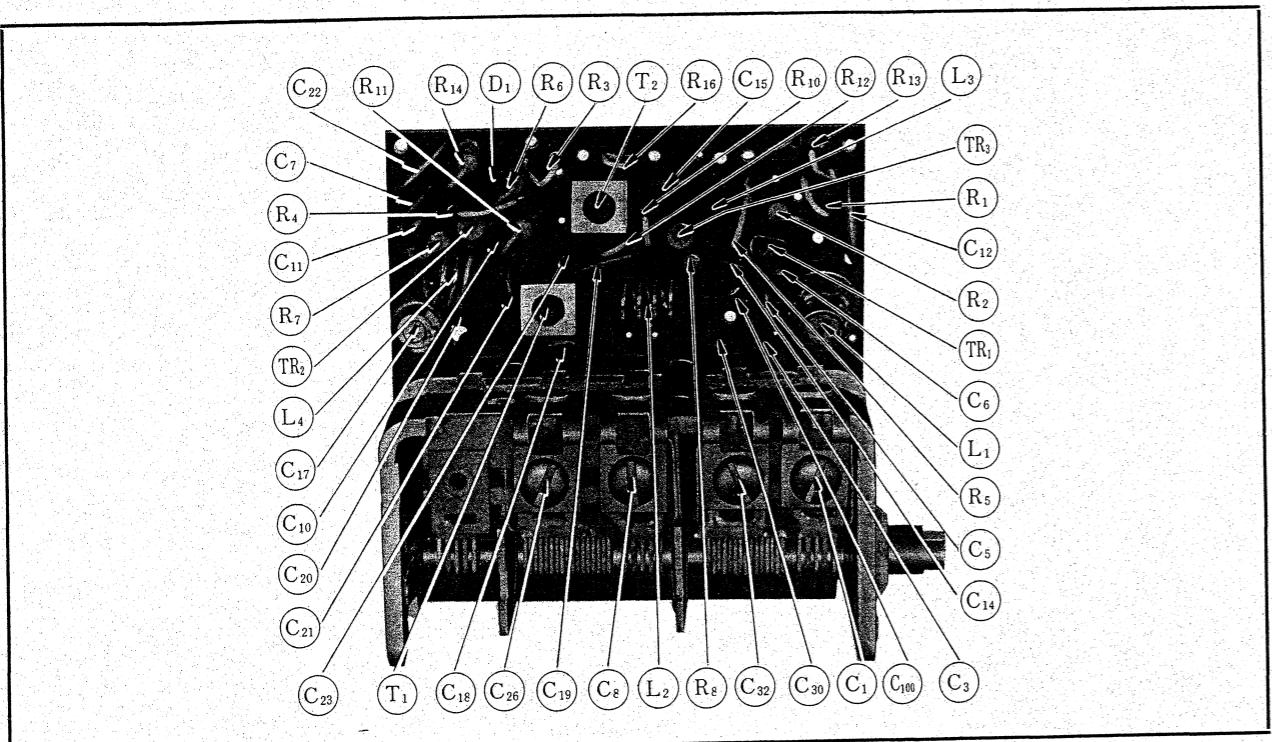


Fig. 12 Component View—Parts Identification, FM RF Circuit

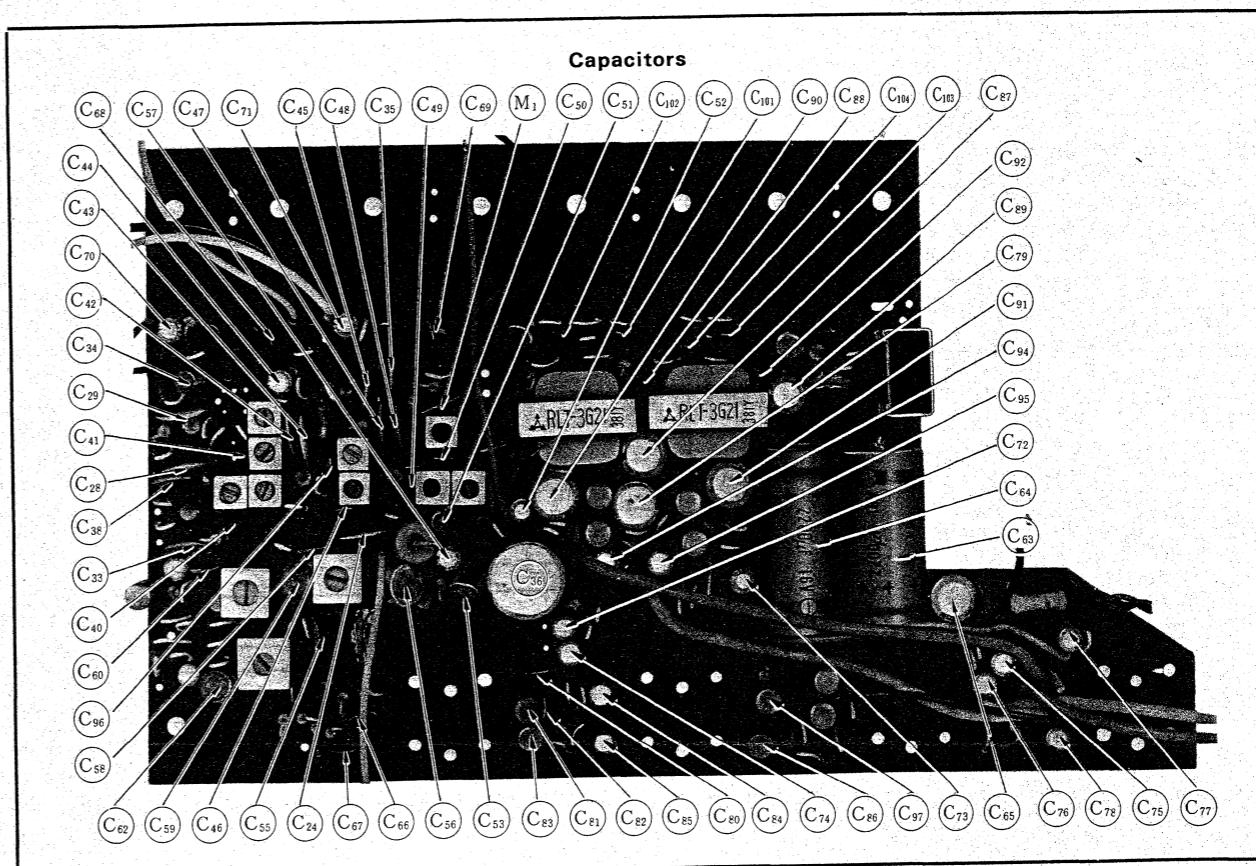


Fig. 14 Component View—Parts Identification, IF, MPX & Audio Circuit

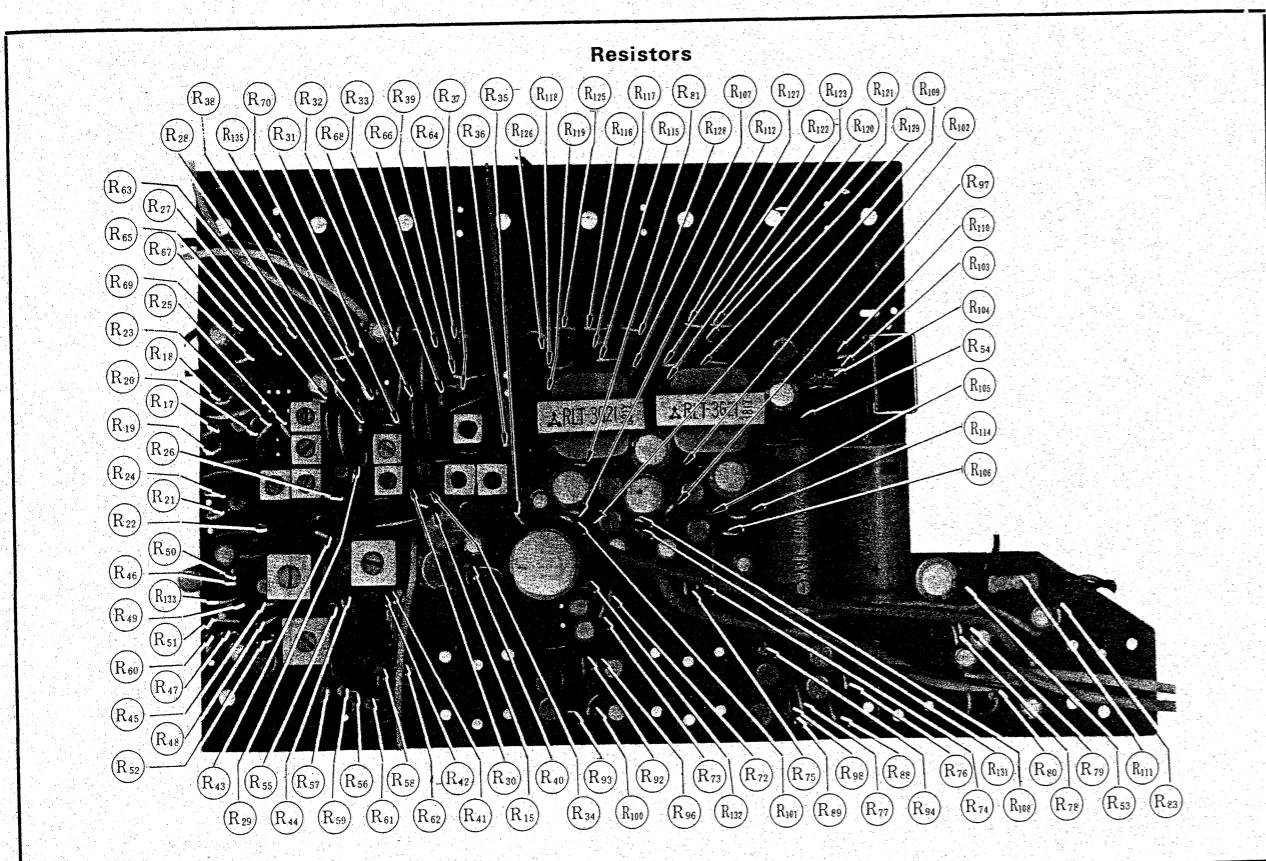
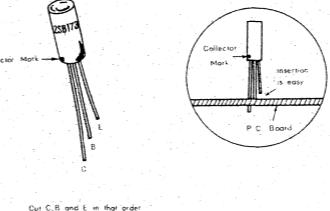
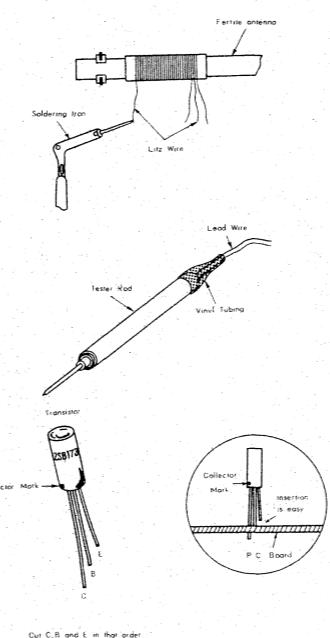


Fig. 13 Component View—Parts Identification, IF, MPX & Audio Circuit



■ SERVICE AIDS

HOW TO SOLDER THE LITZ WIRE OF FERRITE ANTENNAS

When soldering Litz wire of the old type, it is difficult to remove the material covering the soldered part. When soldering the Litz wire of the new type, however, it is easy to remove the covering material with a soldering iron as shown in the illustration.

TRANSISTOR REPLACEMENT

When replacing a bad transistor, you may accidentally solder a lead (leg) in the wrong position and the solder cannot be removed. The best method to make transistor replacement without making this error is to cut the transistor lead wires diagonally (in the order C, B and E) as shown in the illustration, in order that leg insertion can be easily performed. If a mistake is made, it can be easily and quickly detected and corrected.

HOW TO AVOID BREAKING TESTER ROD LEAD WIRE

The test lead wire may break at its connection with the tester rod. To avoid this, put a piece of vinyl tubing onto the end of the tester rod as shown in the illustration. This will make much longer life without breaking.

MODEL RE-7670B

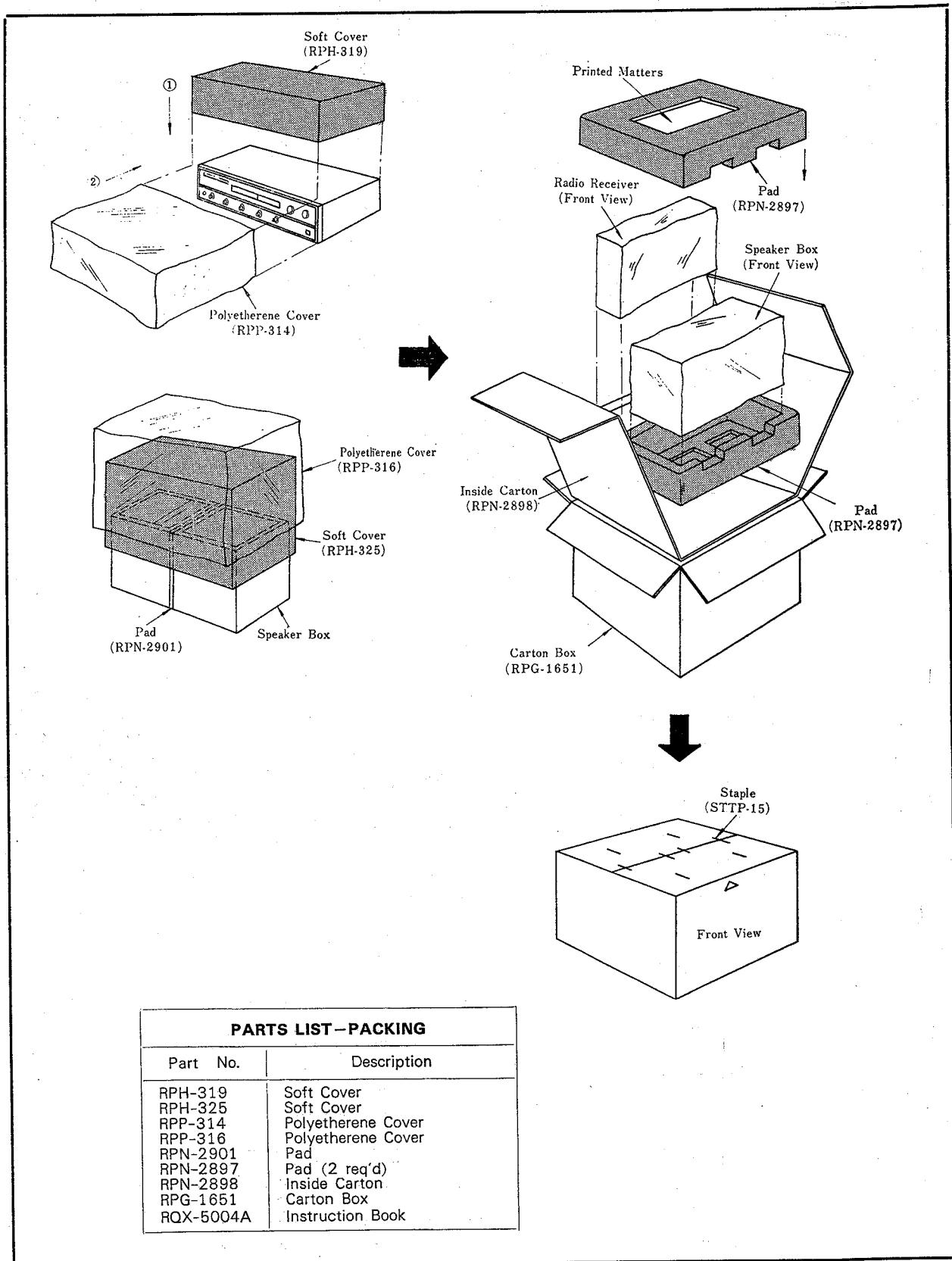


Fig. 16 Component Packing

MODEL RE-7670B



REPLACEMENT PARTS LIST

Notes:

1. * indicates parts for the complete cabinet which are included when the cabinet is ordered.
2. Part numbers are indicated on most mechanical parts. Please use this number, therefore, when ordering parts.
3. ISO metric thread screws & parts which employ ISO metric thread screws are identified by ISO marking.

Ref. No.	Part No.	Description
TRANSISTORS AND DIODES		
TR ₁	2SK19	FM RF Amplifier
TR ₂	2SC469	FM Oscillator
TR ₃	2SC920	FM Mixer
TR ₄	2SC920	AM Converter
TR ₅	2SC469	FM 1st IF Amplifier
TR ₆	2SC469	FM 2nd IF Amp. & AM 1st IF Amp.
TR ₇	2SC469	FM 3rd IF Amp. & AM 2nd IF Amp.
TR ₈	2SC183	Composite Amplifier
TR ₉	2SC183	19 kHz Amplifier
TR ₁₀	2SA101	38 kHz Amplifier
TR ₁₁	2SC183	DC Amplifier
TR ₁₂	2SB178	Eye Switching
TR ₁₃	2SA564	Pre Amplifier (Right)
TR ₁₄	2SA564	Pre Amplifier (Left)
TR ₁₅	2SB173	Squelch & 1st AF Amplifier (Right)
TR ₁₆	2SB173	Squelch & 1st AF Amplifier (Left)
TR ₁₇	2SB173	2nd AF Amplifier (Right)
TR ₁₈	2SB173	2nd AF Amplifier (Left)
TR ₁₉	2SB176	3rd AF Amplifier (Right)
TR ₂₀	2SB176	3rd AF Amplifier (Left)
TR ₂₁	2SB473	Power Amplifier (Right)
TR ₂₂	2SB473	Power Amplifier (Left)
TR ₂₃	2SB473	Regulator
TR ₂₄	2SB473	Regulator
TR ₂₅	2SB178	
TR ₂₆	2SC183	
D ₁	1S351	FM AFC
D ₂	1S1211	AM D. AGC
D ₄	1S1211	FM AGC
D ₅	OA90 or 1N34A	FM D. AGC
D ₆	OA90 or 1N34A	
D ₇	OA90 or 1N34A	AM Detector & AGC
D ₈	OA90 or 1N34A	
D ₉	OA90 or 1N34A	FM Detector
D ₁₀	OA90 or 1N34A	
D ₁₁	OA90 or 1N34A	MPX Detector
D ₁₂	OA90 or 1N34A	
D ₁₃	OA90 or 1N34A	
D ₁₄	1S1211	Operation Compensator
D ₁₅	1S1211	
D ₁₆	OA90 or 1N34A	DC Switching
RECTIFIER		
Se	KC2dP22/1C	Rectifier
CAPACITORS		
C ₂ , C ₉ , C ₁₆ , C ₂₇ , C ₃₁	ECV-5XR27B13S	Tuning Gang. w/Trimmer (C ₁ , C ₈ , C ₂₆ , C ₃₂)
C ₃	ECC-D05070DC	7 PF, 50WV, ±0.5 PF, Ceramic
C ₄	ECC-D05050CC	5 PF, 50WV, ±0.25 PF, Ceramic
C ₅	ECK-D05102P	0.001 µF, 50WV, +100%, -0%, Ceramic
C ₆	ECK-D05102P	0.001 µF, 50WV, +100%, -0%, Ceramic
C ₇	ECC-D05150KC	15 PF, 50WV, ±10%, Ceramic
C ₁₀	ECC-D05070DC	7 PF, 50WV, ±0.5 PF, Ceramic
C ₁₁	ECK-D05102P	0.001 µF, 50WV, +100%, Ceramic
C ₁₂	ECK-E05223P	0.022 µF, 50WV, +100%, Ceramic
C ₁₄	ECC-D05040C	4 PF, 50WV, ±0.25 PF, Ceramic
C ₁₅	ECM-S05121J-H	120 PF, 50WV, ±5%, Mica

MODEL RE-7670B

Ref. No.	Part No.	Description		
CAPACITORS				
C ₁₇	ECV-1ZW10P12	Trimmer, FM	Oscillator	
C ₁₈	ECC-D05010C	1 PF,	50WV, ±0.25 PF, Ceramic	
C ₁₉	ECK-E05103P	0.01 μF,	50WV, +100%, Ceramic - 0%	
C ₂₀	ECC-D05150KC	15PF,	50WV, ±10%, Ceramic	
C ₂₁	ECC-D05070DC	7 PF,	50WV, ±0.5 PF, Ceramic	
C ₂₂	ECK-E05223P	0.022 μF,	50WV, +100%, Ceramic - 0%	
C ₂₃	ECC-D051R5C	1.5 PF,	50WV, ± 0.25 PF, Ceramic	
C ₂₄	ECK-E05223P	0.022 μF,	50WV, +100%, Ceramic - 0%	
C ₂₈	ECK-E05103MY	0.01 μF,	50WV, ±20%, Ceramic	
C ₂₉	ECK-E05103MY	0.01 μF,	50WV, ±20%, Ceramic	
C ₃₀	ECC-D05050CC	5 PF,	50WV, ±0.25 PF, Ceramic	
C ₃₃	ECK-E05103P	0.01 μF,	50WV, +100%, Ceramic - 0%	
C ₃₄	ECQ-S1271JZ	270PF,	125WV, ± 5%, Styrol	
C ₃₅	ECK-E05223P	0.022 μF,	50WV, +100%, Ceramic - 0%	
C ₃₆	ECE-A6V470	470 μF,	6.3WV, Electrolytic	
C ₃₇	ECC-D05040C	4 PF,	50WV, ±0.25 PF, Ceramic	
C ₃₈	ECK-E05103P	0.01 μF,	50WV, +100%, Ceramic - 0%	
C ₃₉	ECQ-S1152KZ	1500 PF,	125WV, ±10%, Styrol	
C ₄₀	ECC-D05120KC	12 PF,	50WV, ±10%, Ceramic	
C ₄₁	ECC-D05150KC	15 PF,	50WV, ±10%, Ceramic	
C ₄₂	ECK-E05103P	0.01 μF,	50WV, +100%, Ceramic - 0%	
C ₄₃	ECK-E05223P	0.022 μF,	50WV, +100%, Ceramic - 0%	
C ₄₄	ECE-A16V3R3	3.3 μF,	16WV, Electrolytic	
C ₄₅	ECK-E05223P	0.022 μF,	50WV, +100%, Ceramic - 0%	
C ₄₆	ECC-D05040C	4 PF,	50WV, ±0.25 PF, Ceramic	
C ₄₇	ECK-E05103P	0.01 μF,	50WV, +100%, Ceramic - 0%	
C ₄₈	ECK-E05223P	0.022 μF,	50WV, +100%, Ceramic - 0%	
C ₄₉	ECC-D05040C	4 PF,	50WV, ±0.25 PF, Ceramic	
C ₅₀	ECM-S05470K-H	47 PF,	50WV, ±10%, Mica	
C ₅₁	ECQ-S1271JZ	270PF,	125WV, ±5%, Styrol	
C ₅₂	ECE-A16V4R7	4.7 μF,	16WV, Electrolytic	
C ₅₃	ECQ-S1222KZ	2200 PF,	125WV, ±10%, Styrol	
C ₅₄	ECM-S05820K-H	82 PF,	50WV, ±10%, Mica	
C ₅₅	ECQ-G05153MZ-N	0.015 μF,	50WV, ±20%, Polyester	
C ₅₆	ECQ-S1472KZ	4700 PF,	125WV, ±10%, Styrol	
C ₅₇	ECE-A16V4R7	4.7 μF,	16WV, Electrolytic	
C ₅₈	ECQ-G05103MZ-N	0.01 μF,	50WV, ±20%, Polyester	
C ₅₉	ECQ-S1472KZ	4700 PF,	125WV, ±10%, Styrol	
C ₆₀	ECQ-G05223MZ-N	0.022 μF,	50WV, ±20%, Polyester	
C ₆₁	ECE-A25V1	1 μF,	25WV, Electrolytic	
C ₆₂	ECQ-S1152KZ	1500 PF,	125WV, ±10%, Styrol	
C ₆₃	ECE-B16V2200	2200 μF,	16WV, Electrolytic	
C ₆₄	ECE-B16V2200	2200 μF,	16WV, Electrolytic	
C ₆₅	ECE-A16V47	47 μF,	16WV, Electrolytic	
C ₆₆	ECQ-G05223MZ-N	0.022 μF,	50WV, ±20% Polyester	
C ₆₇	ECQ-G05223MZ-N	0.022 μF,	50WV, ±20% Polyester	
C ₆₈	ECQ-G05103MZ-N	0.01 μF,	50WV, ±20% Polyester	
C ₆₉	ECQ-G05103MZ-N	0.01 μF,	50WV, ±20% Polyester	
C ₇₀	ECE-A16V4R7	4.7 μF,	16WV, Electrolytic	
C ₇₁	ECE-A16V4R7	4.7 μF,	16WV, Electrolytic	
C ₇₂	ECE-A16V3R3	3.3 μF,	16WV, Electrolytic	
C ₇₃	ECE-A16V4R7	4.7 μF,	16WV, Electrolytic	
C ₇₄	ECE-A16V3R3	3.3 μF,	16WV, Electrolytic	
C ₇₅	ECE-A16V3R3	3.3 μF,	16WV, Electrolytic	
C ₇₆	ECE-A16V3R3	3.3 μF,	16WV, Electrolytic	
C ₇₇	ECA-G16ER33	0.33 μF,	16WV, Electrolytic	
C ₇₈	ECA-G16ER33	0.33 μF,	16WV, Electrolytic	

MODEL RE-7670B

Ref. No.	Part No.	Description
CAPACITORS		
C ₇₉	ECE-A6V220	220 μ F, 6.3WV, Electrolytic
C ₈₀	ECQ-G05153MZ-N	0.015 μ F, 50WV, $\pm 20\%$, Polyester
C ₈₁	ECA-G16ER22	0.22 μ F, 16WV, Electrolytic
C ₈₂	ECQ-G05153MZ-N	0.015 μ F, 50WV, $\pm 20\%$, Polyester
C ₈₃	ECA-G16ER22	0.22 μ F, 16WV, Electrolytic
C ₈₄	ECA-G16ER33	0.33 μ F, 16WV, Electrolytic
C ₈₅	ECA-G16ER33	0.33 μ F, 16WV, Electrolytic
C ₈₆	ECA-G16ER1	0.1 μ F, 16WV, Electrolytic
C ₈₇	ECE-A10V100	100 μ F, 10WV, Electrolytic
C ₈₈	ECQ-G05222MZ-N	0.0022 μ F, 50WV, $\pm 20\%$, Polyester
C ₈₉	ECE-A10V47	47 μ F, 10WV, Electrolytic
C ₉₀	ECE-A6V220	220 μ F, 6.3WV, Electrolytic
C ₉₁	ECE-A6V220	220 μ F, 6.3WV, Electrolytic
C ₉₂	ECQ-G05222MZ-N	0.0022 μ F, 50WV, $\pm 20\%$, Polyester
C ₉₃	ECK-D14101P	100 PF, 2800WV, $\pm 100\%$, Ceramic
C ₉₄	ECE-A16V4R7	4.7 μ F, 16WV, Electrolytic
C ₉₅	ECE-A16V4R7	4.7 μ F, 16WV, Electrolytic
C ₉₆	ECC-D05330KC	33 PF, 50WV, $\pm 10\%$, Ceramic
C ₉₇	ECE-G16ER1	0.1 μ F, 16WV, Electrolytic
C ₉₈	ECE-A6V33	33 μ F, 6.3WV, Electrolytic
C ₉₉	ECE-A10V10	10 μ F, 10WV, Electrolytic
C ₁₀₀	ECC-D05010C	1 PF, 50WV, ± 0.25 PF, Ceramic
C ₁₀₁	ECQ-G05222MZ-N	0.0022 μ F, 50WV, $\pm 20\%$, Polyester
C ₁₀₂	ECQ-G05222MZ-N	0.0022 μ F, 50WV, $\pm 20\%$, Polyester
C ₁₀₃	ECQ-G05222MZ-N	0.0022 μ F, 50WV, $\pm 20\%$, Polyester
C ₁₀₄	ECQ-G05222MZ-N	0.0022 μ F, 50WV, $\pm 20\%$, Polyester
C ₁₀₅	ECK-E05103MY	0.01 μ F, 50WV, $\pm 20\%$, Ceramic
C ₁₀₆	ECK-E05103MY	0.01 μ F, 50WV, $\pm 20\%$, Ceramic
C ₁₀₇	ECK-E05103MY	0.01 μ F, 50WV, $\pm 20\%$, Ceramic
RESISTORS		
R ₁	ERD-14VK 474	470K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂	ERD-14VK 224	220K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃	ERD-14VK 182	1.8K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₄	ERD-14VK 682	6.8K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₅	ERD-14VK 471	470 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₆	ERD-14VK 102	1K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₇	ERD-14VK 472	4.7K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₈	ERD-14VK 123	12K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₉	ERD-14VK 272	2.7K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₀	ERD-14VK 561	560 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₁	ERD-14VK 104	100K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₂	ERD-14VK 221	220 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₃	ERD-14VK 101	100 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₄	ERD-14VK 224	220K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₅	ERD-14VK 474	470K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₆	ERD-14VK 121	120 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₇	ERD-14VK 153	15K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₈	ERD-14VK 333	33K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₁₉	ERD-14VK 222	2.2K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₀	ERD-14VK 221	220 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₁	ERD-14VK 562	5.6K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₂	ERD-14VK 183	18K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₃	ERD-14VK 182	1.8K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₄	ERD-14VK 681	680 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₅	ERD-14VK 391	390 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₆	ERD-14VK 101	100 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₇	ERD-14VK 124	120K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₈	ERD-14TK 331	330 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₂₉	ERD-14VK 221	220 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃₀	ERD-14TK 101	100 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃₁	ERD-14VK 153	15K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃₂	ERD-14TK 562	5.6K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃₃	ERD-14TK 681	680 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃₄	ERD-14TK 221	220 Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon
R ₃₅	ERD-14VK 102	1K Ω , $\frac{1}{4}$ Watt, $\pm 10\%$, Carbon

MODEL RE-7670B

Ref. No.	Part No.	Description
RESISTORS		
R36	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R37	ERD-14VK 472	4.7KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R38	ERD-14VK 273	27KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R39	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R40	ERD-14VK 224	220KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R41	EVL-SOAA00B13	1KΩ (B), Separation Control
R42	ERD-14TK 152	1.5KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R43	ERD-14VK 334	330KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R44	ERD-14VK 101	100Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R45	ERD-14VK 820	82Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R46	ERD-14VK 103	10KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R47	ERD-14VK 473	47KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R48	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R49	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R50	ERD-14TK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R51	ERD-14VK 562	5.6KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R52	ERD-14VK 101	100Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R53	ERC-12GM 681	680Ω, $\frac{1}{2}$ Watt, ±20%, Solid
R54	ERC-12GM 680	68Ω, $\frac{1}{2}$ Watt, ±20%, Solid
R55	ERD-14TK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R56	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R57	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R58	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R59	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R60	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R61	ERD-14VK 223	22KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R62	ERD-14VK 223	22KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R63	ERC-12GM 155	1.5MΩ, $\frac{1}{2}$ Watt, ±20%, Solid
R64	ERC-12GM 155	1.5MΩ, $\frac{1}{2}$ Watt, ±20%, Solid
R65	ERC-12GM 225	2.2MΩ, $\frac{1}{2}$ Watt, ±20%, Solid
R66	ERC-12GM 225	2.2MΩ, $\frac{1}{2}$ Watt, ±20%, Solid
R67	ERD-14VK 183	18KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R68	ERD-14VK 183	18KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R69	ERD-14VK 562	5.6KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R70	ERD-14VK 562	5.6KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R71	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R72	ERD-14VK 332	3.3KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R73	ERD-14VK 332	3.3KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R74	ERD-14VK 823	82KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R75	ERD-14VK 823	82KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R76	ERD-14VK 101	100Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R77	ERD-14VK 101	100Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R78	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R79	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R80	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R81	ERD-14VK 121	120Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R82	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R83	ERD-14VK 472	4.7KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R84	ERD-14VK 472	4.7KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R85	EVC-S2AL50G14	10KΩ (G), Balance Control
R86, R87	EVF-77NL50A14	10KΩ (A), Volume Control, w/ON-OFF Switch (S ₁₋₁ ~S ₁₋₂)
R88	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R89	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R90, R91	EVF-68AL50A14	10KΩ (A), Treble Control
R92	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R93	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R94	ERD-14VK 272	2.7KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R95, R99	EVF-68AL50A14	10KΩ (A), Bass Control
R96	ERD-14VK 391	390Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R97	ERD-14VK 332	3.3KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R98	ERD-14VK 272	2.7KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R99	ERD-14VK 391	390Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R100	ERD-14VK 101	100Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R101	ERD-14VK 122	1.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R102	ERD-14VK 222	2.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R103	EVL-T0AA00B53	5KΩ (B), Line Voltage Control
R104	ERD-14VK 123	12KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon

MODEL RE-7670B

Ref. No.	Part No.	Description
RESISTORS		
R106	ERD-14VK 101	100Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R107	ERD-14VK 274	270KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R108	ERD-14VK 332	3.3KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R109	ERD-14VK 123	12KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R110	ERD-14VK 331	330Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R112	ERD-14VK 151	150Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R113	ERD-14VK 472	4.7KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R114	ERD-14VK 151	150Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R115	ERD-14VK 474	470KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R116	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R117	ERD-14VK 180	18Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R118	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R119	ERD-14VK 180	18Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R120	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R121	ERD-14VK 180	18Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R122	ERD-14VK 102	1KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R123	ERD-14VK 180	18Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R124	ERD-14VK 274	270KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R125	ERD-14VK 1R5	1.5Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R126	ERD-14VK 1R5	1.5Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R127	ERD-14VK 1R5	1.5Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R128	ERD-14VK 1R5	1.5Ω, $\frac{1}{4}$ Watt, ±10%, Carbon
R129	ERD-14VK 474	470KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R131	ERD-14VK 152	1.5KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R132	ERD-14VK 822	8.2KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R133	ERD-14VK 152	1.5KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R134	ERD-14TK 153	15KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R135	ERD-14VK 103	10KΩ, $\frac{1}{4}$ Watt, ±10%, Carbon
R136	ERC-12GM 331	330Ω, $\frac{1}{2}$ Watt, ±20%, Solid
R137	ERC-12GM 331	330Ω, $\frac{1}{2}$ Watt, ±20%, Solid
COMPONENT COMBINATION		
M1	EXA-F203Z471	0.01μF, 0.01μF, & 470Ω
M2	EXA-5DL04C	330PF, 330PF, 4.7KΩ & 4.7KΩ
COILS AND TRANSFORMERS		
L1	RLA-4P7	FM Antenna Coil
L2	RLD-4Y54	FM Collector Coil
L3	RLQ-Y21G-1	FM Choke Coil
L4	RLO-4Y53	FM Oscillator Coil
L5	RLF-2D48	AM Antenna Coil
L6	RLQ-2B50	AM Oscillator Coil
L7	RLQ-X121-1	Choke Coil
L8	RLO-1X3-Y	SCA Trap Coil
T1	RLI-4B152-M	FM 1st IF Transformer, Primary
T2	RLI-4B152-M	FM 1st IF Transformer, Secondary
T3	RLI-4B351-M	FM 2nd IF Transformer, Primary
T4	RLI-2B152-M	AM 1st IF Transformer, Primary
T5	RLI-4B351-M	FM 2nd IF Transformer, Secondary
T6	RLI-2B157-M	AM 1st IF Transformer, Secondary
T7	RLI-4B251-M	FM 3rd IF Transformer
T8	RLI-2B257-M	AM 2nd IF Transformer
T9	RLI-4B551	FM 4th IF Transformer, Primary
T10	RLI-4B552	FM 4th IF Transformer, Secondary
T11	RLI-2B457-M	AM 3rd IF Transformer
T12	RLM-1C4-T	MPX Coil
T13	RLM-1C2-T	MPX Coil
T14	RLM-1C7	MPX Coil
T15	RLT-3G21	Input Transformer (Right) P=1.5KΩ: S=200Ω
T16	RLT-3G21	Input Transformer (Left) P=1.5KΩ: S=200Ω
T17	RLT-5L36	Power Transformer
SWITCHES		
S2	ESR-E134L50AE	Band Selector Switch
S3	RSR-22	AFC Switch
S4	RSR-29	Power Source Voltage Selector Switch

MODEL RE-7670B

Ref. No.	Part No.	Description
MISCELLANEOUS		
	RJS-31	Socket, Record/playback
	RSF-1022	Fuse (2 req'd)
	RJF-114	Holder, Fuse
	RVL-212-4	Dial Light, 7.5V 0.075A
	RVL-218	Dial Light, 6.3V 0.25A (5 req'd)
	RJF-113	Holder, Dial Light (5 req'd)
	RJA-39	AC Cord, Power Source
	RHR-111	Grommet, AC Cord
	RJF-4209-1	Terminal, FM EXT Antenna
	RJF-3602	Jack, Phono, Tape & Speaker
	RJJ-79	Jack, Headphone
	RMY-75	Heat Sink, Transistor (TR ₁₂)
	RMY-6	Heat Sink, Transistor (TR ₂₅)
	RDT-5496	Shaft, Tuning
	RDD-33-2	Drum, Dial
	M2-5	Screw, Dial Drum M'tg.
	RDX-801-1S	Shaft, Dial Drum
	RDG-7-1	Gear (thick), Dial
	RDG-605-1	Gear (thin), Dial
	M2.6-8	Screw, Gear M'tg.
	RUS-80	Spring, Gear
	RDZ-07-1	Cord, Dial, 140cm (55 1/8").
	RDS-417	Spring, Dial (2 req'd)
	RHG-5-1	Rubber Cushion, Tuning Gang M'tg. (4 req'd)
	RHG-109	Rubber Cushion, Core Antenna M'tg. (2 req'd)
	M4-16RS	Red Screw, Cabinet M'tg. (4 req'd)
	XYNR3D6RS	Red Screw, Chassis M'tg. (3 req'd)
	M4-20RS	Red Screw, Chassis M'tg. (4 req'd)
	RNT-520	Washer, Chassis M'tg. (4 req'd)
APPEARANCE		
	RYA-4750S	Cabinet (complete)
	RYE-241	Scale (complete), Dial
	RKU-3160	Rear Panel, Cabinet
	⊕MM2.7-13	Screw, Rear Panel M'tg. (3 req'd)
※	RGP-3040	Panel, Dial
※	RNE-914	Lock Washer, Dial Panel M'tg. (5 req'd)
	RBN-280	Knob; AFC, Treble, Bass, Balance & Volume
	RBN-281	Knob, Tuning & Band Selector
	RDP-329	Pointer, Dial

SPEAKER SYSTEM

Ref. No.	Part No.	Description
SPEAKERS		
SP ₁ & SP ₂	EAS-16P91SA	16 cm (6 1/2") PM Dynamic Speaker, Imp. 16Ω
APPEARANCE AND MISCELLANEOUS		
	RKM-1682	Speaker Cabinet (2 req'd)
	RYU-330	Rear Panel (complete) (2 req'd)
	RKB-9037-2S	Baffle board (2 req'd)
	RJP-9034	Cord, Speaker (2 req'd)
	⊕MM2.7-13	Screw, Rear Panel M'tg. (6 req'd)

PRINTED IN JAPAN